

What Is Claimed Is:

1. A sheet handling apparatus comprising:

a detection part that detects a characteristic of a sheet

5 transported by a transport module;

an amplifier that amplifies a signal obtained from the detection part;

an A/D converter that converts an analog signal amplified in the amplifier to a digital signal;

10 determining means that determine the truth of the sheet by use of a signal having been produced as a result of A/D conversion by the A/D converter; and

a control part that changes signal read accuracy of the detection part,

15 wherein, if the sheet is determined as unidentified as a result of determining the truth of the sheet in the determining means, the control part changes a setting of conditions so that a capability to determine the sheet is higher than when the sheet was determined as unidentified, and transports the sheet  
20 determined as unidentified to the detection part so that the truth determination is performed again in the determining means.

2. The sheet handling apparatus according to claim 1,

wherein the control part changes an amplification factor of the amplifier.

25 3. The sheet handling apparatus according to claim 1,

wherein the control part changes the amplification factor of the amplifier correspondingly to denominations.

4. The sheet handling apparatus according to claim 1,  
wherein the control part changes an range between an input  
5 upper limit value and an input lower limit value of the A/D  
converter.

5. The sheet handling apparatus according to claim 3,  
wherein the control part sets conditions so as to narrow  
the range between the upper limit value and the lower limit  
10 value of the A/D converter.

6. The sheet handling apparatus according to claim 1,  
wherein sheets determined as unidentified by the  
determining means include sheets in which characteristics  
indispensable to true bills were detected but which exceed a  
15 permissible error.

7. A method of determining bills in a bill handling  
apparatus, comprising the steps of:

sending a bill to a determining part to perform  
determination;

20 detecting characteristics of the bill by a detection part;  
processing a signal from the detection part and  
determining a denomination and truth of the bill;

as a result of the truth determination, classifying the  
bill into one of at least four types of bills to process the  
25 bill, the four types of bills being true bills determined as

true, false bills lacking characteristics indispensable to true bills, unidentified bills having characteristics indispensable to true bills but exceeding a permissible error thereof, and undefined bills the denominations of which cannot be determined;

5           if the bill is determined as an unidentified bill, changing an amplification factor or resolution of the detection part so as to increase accuracy to determine the bill; and

          after the change, sending the unidentified bill to the determining part again to detect the characteristics of the  
10 bill in the detection part.

8. The determination processing method according to claim 7,

          wherein the changing step changes an input range of the A/D converter.

15           9. The determination processing method according to claim 7,

          wherein, as a result of the truth determination, an undefined bill is returned to a user, a bill determined as an unidentified bill and a bill determined as a false bill in another  
20 determination are stored in the machine, and a bill determined as an undefined bill in yet another determination is returned to the user.

10. A sheet handling apparatus, comprising:

          a determining part that determines the truth of sheets  
25 transported by a transport module;

a control part that changes accuracy to determine the sheets in the determining part; and

a stocking part that temporary holds sheets determined as unidentified in the determining part,

5        wherein, if the sheets are determined as unidentified in the determining part, the control part changes a determination condition so as to increase the determination accuracy of the determining part, and transports the sheets determined as unidentified to the determining part again to determine the  
10    truth of the sheets.

11.    The sheet handling apparatus according to claim 10,  
       wherein the determining part comprises: a detector that detects a characteristic of a sheet, an amplifier that amplifies a signal obtained from the detector, an A/D converter that  
15    converts an analog signal amplified in the amplifier to a digital signal; and determining means that determine the truth of the sheets by use of a signal produced as a result of A/D conversion by the A/D converter,

       wherein, if the sheet is determined as unidentified in  
20    the determining part, the control part changes signal read accuracy of the detector so as to increase a capability to determine the sheet, and transports the sheet determined as unidentified to the detector to again determine the truth of the sheet in the determining means.

25        12.    The sheet handling apparatus according to claim 10,

wherein the sheet handling apparatus includes a storing part that stores contents of sheet transactions by users, and stores information about sheets determined as false bills or unidentified bills as a result of another determination by the determining part in the storing part in association with information capable of identifying the users.

13. The sheet handling apparatus according to claim 12, including a storing chamber for storing the false bills or unidentified bills in the machine without returning them to the users.

14. The sheet handling apparatus according to claim 11, wherein the control part changes an amplification factor of the amplifier.

15. The sheet handling apparatus according to claim 11, wherein the control part changes an input range of the A/D converter.

16. A method of determining bills in a bill handling apparatus, comprising:

transporting bills to an determining part to perform determination;

a first determination mode in which denominations and truth of the bills are determined with first determination accuracy in the determining part;

setting second determination accuracy as higher bill determination accuracy if a bill is determined as an unidentified

bill as a result of determination in the first determination mode;

a second determination mode in which a bill determined as unidentified as a result of the first determination in the determining part set at the second determination accuracy is  
5 determined again; and

processing bills determined as unidentified or false bills as a result of determination in the second determination mode separately from other bills.

10 17. The method of determining bills according to claim 16,

wherein the first determination mode includes the steps of:

detecting the characteristics of the bills by a detector;  
15 and

processing a signal from the detector to determine the truth of the bills.

18. The method of determining bills according to claim 16, setting accuracy so as to increase the amplification factor  
20 or resolution of the detector for detecting the characteristics of the bills in the second determination mode.

19. The method of determining bills according to claim 16, including the step of storing information about sheets determined as false bills or unidentified bills in the second  
25 determination mode in a storing part in association with

information capable of identifying users of the bills.

20. The method of determining bills according to claim 16, further including the step of having users confirm an inputted amount if a bill is determined as an unidentified bill as a result of determining the bill in the first determination mode.